ARA-05
mythical
evap pond

ARA-16
Not available
ANL-729

4/12/88

NMEO PROGRAM

ARA-I SHUTDOWN
Final Report

D. C. Sparks

INFORMATION ONLY
5/29/92
Steven McCauley

ARA-16
#2
reference

TABLE OF CONTENTS

ARA-I HOT CELL

SHUTDOWN FINAL REPORT

1.0 SCOPE

This document presents a characterization of the ARA-I hot cell facility in its present shutdown condition.

2.0 INTRODUCTION

The ARA hot cell facility has been mothballed in accordance to the ARA-I Hot Cell Shutdown Study Report. This document characterizes the facility as it is now, giving room-by-room report as to equipment left and radiological survey.

3.0 INSPECTION OF FACILITY

An inventory of the equipment and its disposition is included in this report as Appendix A.

4.0 PREPARATION FOR MOTHBALLING THE FACILITY

4.1 General preparations for mothballing:

4.1.1 All office furniture was returned to the furniture pool.

4.1.2 The equipment bearing property numbers were transferred per PAIR forms to excess or Facility and Maintenance Department Central Facility south INEL area landlord.

4.1.3 All non-essential power was shutdown at the MCC. South INEL landlord has the responsibility to shutdown power at the main transformer. When Building ARA-627 is shutdown, the power will be cutoff at the substation. All water piping to ARA-626 was shutoff and drained.

4.1.4 The HEPA and charcoal filters were removed from all ventilation systems including the laboratories, decontamination room and hot cell exhaust system. The filter housings were tack welded shut to prevent entry.

4.1.5 The duct work to the cells was capped and sealed.

4.1.6 All rooms that served Zone I or more contamination levels have been barred and locked to prevent unauthorized entry.

4.1.7 The fire prevention system has been drained in all parts of the building.

4.1.8 Equipment permanently installed such as cranes, hoists, air compressor remain, but the power and other utilities have been disconnected from them.

4.1.9 The nuclear material balance area has been discontinued. No nuclear fuel exists in the building.

4.1.10 The ARA hot cell facility documents, SAR, and OSR have been discontinued.

4.2 Room-by room characterization:

4.2.1 Room 101 Electrical Equipment Room: Breakers are closed. The door is locked. The breakers will be opened by south area landlord after facility is turned over to them.

4.2.2 Room 102 Office: All furniture has been removed and the room cleaned. A couple of minor hot spots along base boards remain. Spot No. 1 400 c/m $\beta\gamma$ spot No. 2 100 c/m $\beta\gamma$

4.2.3 Room 103 Vestibule: The LAD has been moved to TRA and one minor hot spot 1,400 c/m $\beta\gamma$ in floor boarder remains.

4.2.4 Room 104 Men's Room: The water has been drained from the system and the fixtures have been removed.

4.2.5 Room 105 Dark Room (part of Room 106): Removed all photo chemicals and supplies. Drained the water system to the sink.

4.2.6 Room 106 Utility Room (part of Room 105): Removed and placed in surplus the excess photo support equipment. The cabinets, sink, and demineralizer are built in so they were left in place.

ARA-17

4.2.7 Room 107 Boiler Room: This room was to be taken care of by the Landlord. It has not been done as of this writing.

4.2.8 Room 108 Corridor: Drinking fountain was shutdown, removed and excessed.

4.2.9 Room 109: Nothing required in this room.

4.2.10 Room 110 Dark Room: Removed the refrigerator, drained the water system. Left the sink and cabinets in place. Minor hot spots $\leq$ 1,000 c/m $\beta\gamma$ by sink base legs remains.

4.2.11 Room 111 Operating Area: Removed all furniture. Removed the stack monitoring equipment and sent it to TAN 607. Drained the oil from the cell viewing windows. Removed the six master salve manipulators. The two model Es were sent to TRA 632 and the other four were disposed of as hot waste. All holes into the cells are capped or covered with metal coverings, a RTV type sealant was used to seal these openings. All utility lines were drained. The fire cabinet was drained and the fire hose removed. Some fixed contamination was found along the piping runway on face of cell (see attached radiation/contamination levels in this report as Appendix B.)

4.2.12 Room 112 Corridor: The hazardous and flammable chemicals were removed. A couple of fixed contamination spots remain along the wall (see attached radiation/contamination levels in this report as Appendix B).

4.2.13 Room 113 Office/Lab: All equipment and furniture was removed from the room. Some fixed contamination was noted near the wall (see attached radiation/ contamination levels in this report as Appendix B).

4.2.14 Room 114 Hot Cell 1: Inside of the cell is a high Zone III. The prefilters were removed. The tables were disposed of. Other than a high pressure water washdown, no other effort was made to reduce the contamination levels. Radiation readings were taken and the general body field was 200 mr/hr (see attached radiation/ contamination levels in this report as Appendix B). The in-cell crane and manipulator were left in place. The breaker to the lights is open. The exhaust piping was cut and capped in the fan loft. Power was opened to the door and the door sealed. Power to the electrical door lock was opened.

ARA-16

4.2.15 Room 114 Hot Cell 2: The radiation readings averaged 40 mr/hr body field. The cell is a Zone III. Other than a high pressure water wash, no other effort was made to reduce the contamination levels (see attached radiation/contamination levels in this report as Appendix B). The door was shut, sealed and power to the electrical door lock was opened. The power breaker to the door and cell lights were opened. The in-cell crane was left in place.

ARA-16

4.2.16 Room 116 Laboratory: Removed all equipment from the room. Capped off the hood exhaust pipe. The cabinets were left in place (see attached radiation/contamination levels in this report as Appendix B). There is some fixed contamination around the floor edge.

4.2.17 Room 117 Isolation #1: The room was deconned down to a Zone II level (see attached radiation/contamination levels in this report as Appendix B). The room was isolated by installing a plywood door with a sealant.

4.2.18 Room 118 Isolation #2: The room was deconned to a Zone II level (see attached radiation/contamination levels in this report as Appendix B). Removed all equipment. Sealed the doorway with plywood and sealant.

4.2.19 Room 119 Health Physics: Removed all furniture and equipment. The RAM equipment cabinet was removed and excessed. Removed and transferred all building RAM heads to TRA. (See attached radiation/contamination levels in this report as Appendix B.)

4.2.20 Room 120 Passage: Some minor fixed contamination (see attached radiation contamination levels in this report as Appendix B).

4.2.21 Room 121 Cold Change Room: The shower, water heater and lockers were left in place. Removed restroom fixtures. Drained the water system (see attached radiation/contamination levels in this report as Appendix B).

4.2.22 Room 122 "Hot" Change Room: Removed sink and plumbing fixtures. Left the lockers in place (see attachment radiation/contamination levels in this report as Appendix B).

4.2.23 Hot Cell Service Area: Removed all equipment. The dry holes had been cleaned out and deconned prior to this shutdown effort. The holes are clean and the mercury tractor and battery charger were transferred to TAN Hot Shop. The cranes are left in place. The power will be shutoff to them by the Facility/Maintenance Department Central Facilities after the facility is turned over to them (see attachment radiation/contamination levels in this report as Appendix B).

4.2.24 Room 124 Decontamination Room: Removed the hood, sink and all miscellaneous equipment. All utilities have been shutoff and drained. There are eleven 2x2x1 wood boxes of contaminated lead bricks in this room. There are two yellow poly wrapped pieces of contaminated asbestos wrapped piping 12 ft long that could not be processed. The room is a Zone II (see attached radiation/contamination levels in this report as Appendix B). The HEPA filters have been removed and the piping capped and sealed. Filter doors were spot welded shut. The room door has been shut, sealed and padlocked.

4.2.25 Room 125 Radiochemistry Lab: The lead brick has been removed. Removed all the equipment including hoods and glove boxes. Removed HEPA filters, capped and sealed-off the piping. Spot welded filter doors shut. Removed the sink trap but left the sink in place. Drained all plumbing in the room. The room is a Zone I. The window was covered with sheetmetal, the doors shut, sealed and locked (see attached radiation/contamination levels in this report as Appendix B).

4.2.26 Room 201 Ventilation Equipment Room: All HEPA and charcoal filters were removed. The housing doors were spot welded shut. The exhaust piping was capped and sealed to prevent air from back flushing into the cells. The power was shutoff to the fans. The room is clean. The only contamination would be the internal parts of housings, piping and fans. The door is locked.

4.3 Outside the Facility

4.3.1 White Elephant Cask #1: Cask is inside the building. north/west corner of services area.

4.3.2 Buried Hot Waste Tank: The pump and all external piping was removed from the tank. The soil was removed from the tank down to the large manhole and to the inlet pipe on the end of the tank. The inlet pipe was cut just outside the concrete bunker and both ends of the line were capped off. The manhole cover was removed and a sludge sample was taken from the bottom of the tank. Only about 3 in. of water/sludge remained in the bottom of the tank. The sample read 300 mr/hr and was sent for hazardous waste analysis. The manhole was recapped. Dug down along side the outlet pump line. There we found some soil contamination, so digging was terminated. The line was capped where the pump was removed. The tank was then reburied. Results of survey are in the attached radiation/containment notes. In order to dig around the tank, the inside portion of the tank enclosure fence had to be taken down. This was not replaced. The outside portion remains intact. The outlet line from the pump has asbestos covering; the piping was rapped and moved into the Decon Room 124. (See attached radiation/ contamination levels in this report as Appendix B.)

5.0 Maintenance

See ARA Hot Cell Shutdown Study pages 8 and 9. All utilities have been shutdown to the building. There should be no requirement of the ARA OSR/SAR for further surveillance. The ARA OSR/SAR has been removed from the active list.

6.0 Contaminated Waste Generation

The total volume of contaminated waste generated during the shutdown was 200 cubic meters. This is a cumulative total of all types of waste, combustible, compactable, metal sized and direct burial.

7.0 The total radiation exposure received by employees during the shutdown was 0.301 penetration man-rem and 0.190 nonpenetrating man-rem. This is a cumulative dose of all personnel involved; crafts people, health physics technicians and Hot Cell personnel.

APPENDIX A

ARA-I SHUTDOWN

EQUIPMENT INVENTORY/DISPOSITION LIST

NMEO PROGRAM
ARA I SHUTDOWN
EQUIPMENT INVENTORY/DISPOSITION LIST

ITEM	ROOM #	EQUIPMENT #	CONTAMINATED (Y/N)	DISPOSITION
2 DESKS	RM 102		N	Furniture Pool
3X5 TABLE				"
5 DWR CAB				"
BOOK CASE				"
BOOK CASE				"
4 CHAIRS				"
NONE	RM 104			———
SM REFRIG	RM 110			excess
FILM DRY		220469		destroyed
MISC EQ	RM 106			excess
DEMIN EQ		227062		left in place
MISC CAB		227142-227145		"
2DR CAB 4	RM 113			excess
INSTRON PANEL		220515		TRA 632
TINUS OLSEN		220140		"
TINUS FRAME			Y	"
TINUS MOTOR			Y	"
BOSH/LOMB CAMER		220482 & 220488	N	excess
POLISH EQ		220495 & 220481		excess
4DWR/1DR CAB				Furniture Pool
4 DESK/6 CHAIR				"
CAMERA TABLE				excess
INST CABINET		219750-51&219854		"

ITEM #	ROOM #	EQUIPMENT #	CONTAMINATED (Y/N)	DISPOSITION
M SLAVE 1	RM 111	220520	Y	Hot Waste
" 2		220521		TRA 632
" 3		220524		TRA 632
" 4		220525		HotWaste
" 5		220527		Hot Waste
" 6		220528		Hot Waste Burried
PERISCOPE		220522		TAN 607
PERISCOPE		220523		"
GM CONSOLE		220519	N	excess
GM CONSOLE		216684		excess
EBERLINE PING		220516		excess
VACUUM PUMP			Y	TAN 607
VACUUM PUMP				"
3 SH CAB			N	Furniture Pool
3 SH CAB				"
3X5 TABLE				"
3X5 TABLE				"
3X4 TABLE				"
4 CHAIRS				"
MISC SM TOOLS				TRA 632
OIL IN 3 WINDOW				Hazardous Waste

ITEM #	ROOM #	EQUIPMENT #	CONTAMINATED (Y/N)	DISPOSITION
TOOL BOX	RM 112		N	excess
ACID CAB(W/CHEM)		AEC/GE #65155		Chem to Hazardous Waste
FLAM CAB(W/CHEM)				"
2DR CAB				excess
LAB CAB/EQ.	RM 116			Cabinets left in place Eq. excess
AIR HOOD			Y	excess
POLISHER		220501		"
VACUUM PUMP			N	"
HARDNESS TESTER		220511		"
STEREO MICROSCOPE		220505		"
LIQ. CHROMATOGRAPH		214870		"
2DWR CAB				"
HP EQUIP	RM 119			Return to HP
2DR CAB				excess
2DR CAB(W/SOURCES)			Y	excess
DESK/3CHAIRS			N	"
2X6 TABLE				"
10 LOCKERS	RM 121 & 122			Left in place
10 LOCKERS				"
RAD CLOTHING BINS				TRA 632
7 SHELF CAB				excess
2 CHAIRS				"

ITEM #	ROOM #	EQUIPMENT #	CONTAMINATED (Y/N)	DISPOSITION
	RM 125			
INCUBATOR			Y	Hot Waste
POLISHER		220352		"
CUT-OFF SAW				Hot Waste
SONIC SIFTER		220536		"
DRYER		214854		"
BUHLER SANDER		220534		"
FISCHER BATH		225133		"
JARRET CUT-OFF SAW		220353		"
DEMINERALIZER (SMALL)				left in place
AIR COMPRESSOR		AEC 81273		left in place
BALANCE				Hot Waste
9 AIR HOODS AND GLOVE BOXES			Y	Hot Waste

ITEM #	ROOM #	EQUIPMENT #	CONTAMINATED (Y/N)	DISPOSITION
	RM 123			
3 2DR CABINETS			Y	excess
BATTERY CHARGER			N	Equipment Pool
MERCURY TRACTOR		AEC/GE #75214		"
INSTRON LOAD FRAME 10K			Y	TRA 632
INSTRON LOAD FRAME 20K				"
CHERRY PICKER 650#		AEC/GE #67516		Hot Waste
MISC. CAB/WORK BENCHES				excess
ROLL-AWAY TOOL BOX				Hot Waste
	OUTSIDE			
CASK #1			Y	left in building
	ROOF			
14 HEPA FILTER BANKS			Y	Hot Waste
3 CHARCOAL FILTER BANKS				Hot Waste
	RM 114 & 115			
GM MANIPULATOR				left in place
2 1-TON HOISTS				"
6 MASTER SLAVE MANIPULATORS				2 TRA 632 4 Hot Waste

Appendix B

Fixed C Levels Present in Building 626

Along Walls/Baseboards w/Ludlum 2A

Room #102 (Office)	#1 = 400 c/m βγ #2 = 100 c/m βγ
Room #103 (Main Entrance)	#3 = 1.400 c/m βγ
Room #104 (Restroom)	No C Noted
Room #105/106 (Darkroom)	No C Noted
Room #108 (Hallway)	No C Noted
Room #109/110 (Darkroom)	#4 = ≤ 1,000 c/m βγ Around Sink Base Legs
Room #111 (H. C. Gallery)	#5 = ≤ 2,000 c/m βγ Along Piping/Conduit Trays on Face of H.C.'s. #6 = 400 c/m βγ
Room #112 (Hallway)	#7 = 1,200 c/m βγ #8 = 300 c/m βγ #9 = 300 c/m βγ
Room #113	#10 = 1,400 c/m βγ #11 = 300 c/m βγ #12 = 500 c/m βγ #13 = 600 c/m βγ #14 = 1,600 c/m βγ
Room #116	#15 = 400 c/m βγ #16 = 1,400 c/m βγ Behind Counter #17 = 800 c/m βγ
Room #119 (HPO)	#18 = 1,400 c/m βγ #19 = 400 c/m βγ
Room #120 (Hallway)	#20 = 2,600 c/m βγ #21 = 600 c/m βγ #22 = 500 c/m βγ #23 = 500 c/m βγ #24 = 600 c/m βγ

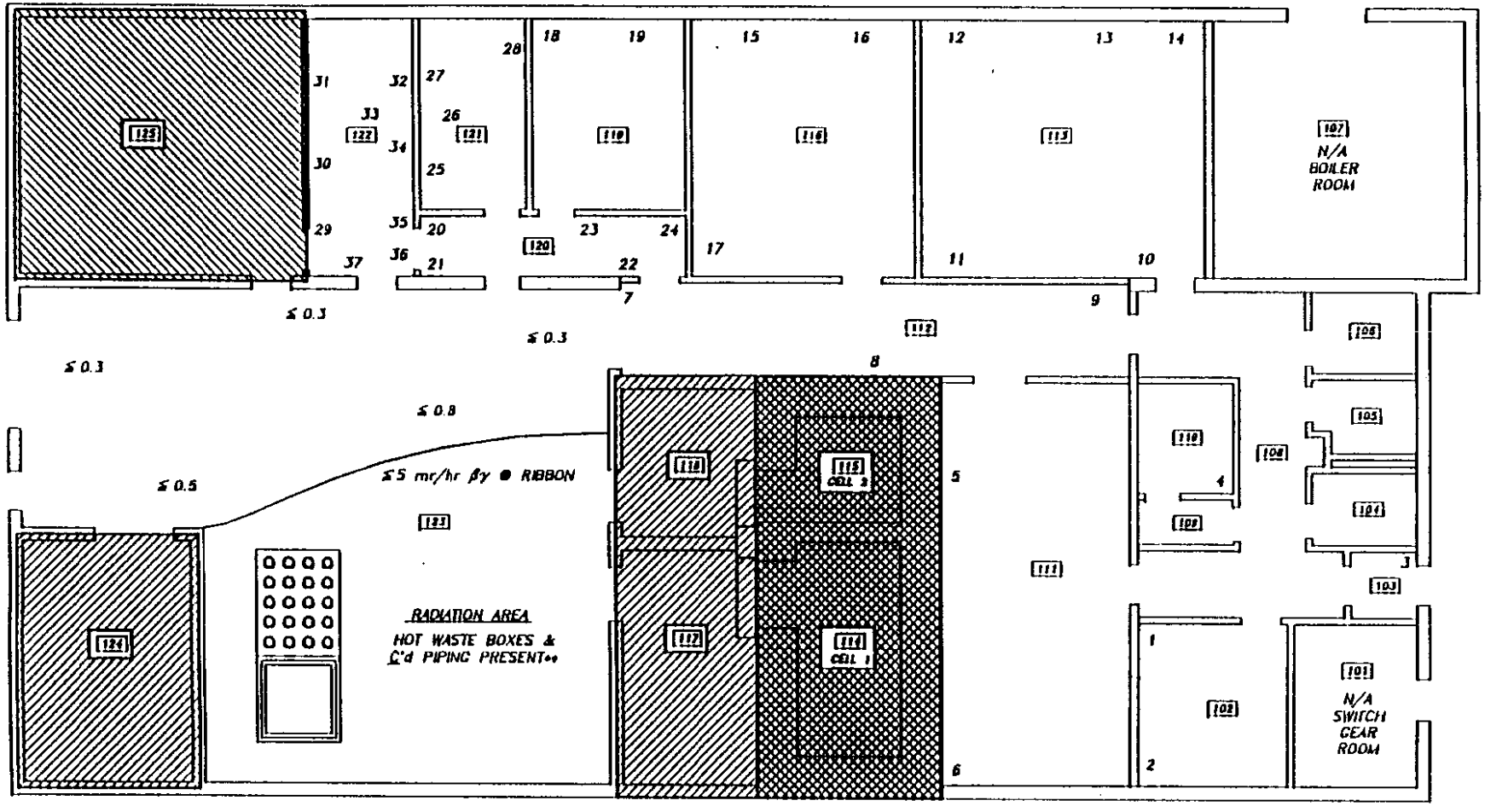
Appendix B

Fixed C Levels Present in Building 626

Along Walls/Baseboards w/Ludlum 2A

(Continued)

Room #121 (Dressing Room)	#25 = 1,000 c/m βγ #26 = 2,000 c/m βγ Floor Drain #27 = 2,500 c/m βγ #28 = 500 c/m βγ
Room #122 (Issue Room)	#29 = 3,000 c/m βγ #30 = 4,000 c/m βγ #31 = 1,500 c/m βγ #32 = 1,000 c/m βγ #33 = 500 c/m βγ Floor Drain #34 = 2,000 c/m βγ #35 = 1,200 c/m βγ #36 = ≤ 0.5 mr/hr 138βγ w/gm ≤ 8,000 c/m βγ w/2A Portal Monitor Pit Covered with Plywood #37 = 1,600 c/m βγ



#1–37 = FIXED C LEVELS PRESENT IN FACILITY (SEE ADDITIONAL PAGES)

•• = IF BOXES IN RM #123 ARE REMOVED, ≤ 300 mr/hr βγ @ CONTACT w/ BOXES

GBF READINGS w/ GM ARE < 0.1–0.2 mr/hr βγ w/ GM IN FACILITY

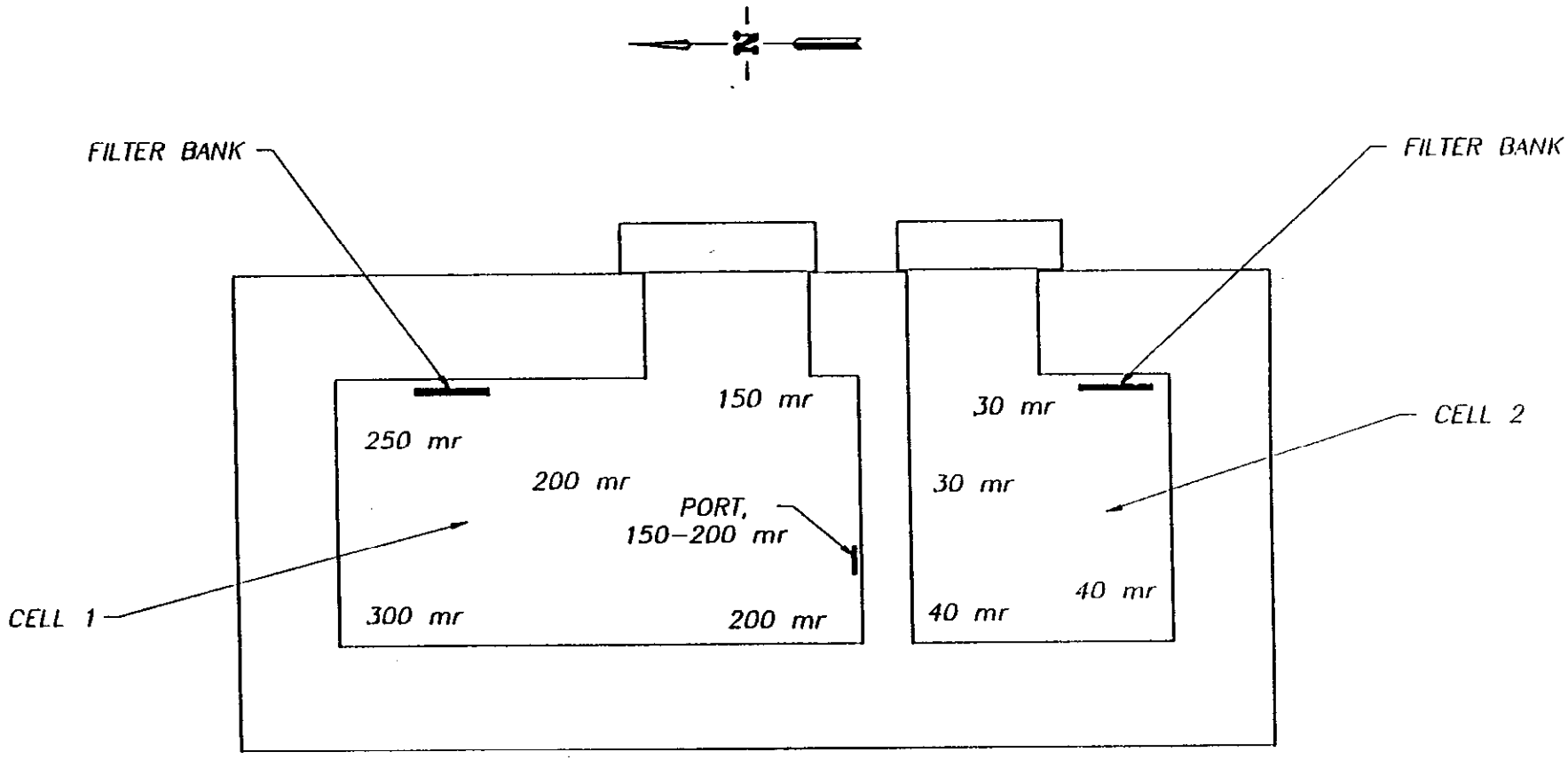
ZONE I

ZONE II

ZONE III

ARA HOT CELLS
PLAN--FIRST FLOOR

C ZONES/LEVELS AS FACILITY WAS LEFT
SEALED AND/OR LOCKED ALL C ZONES
9-26-88



FILTERS REMOVED 8/24/88

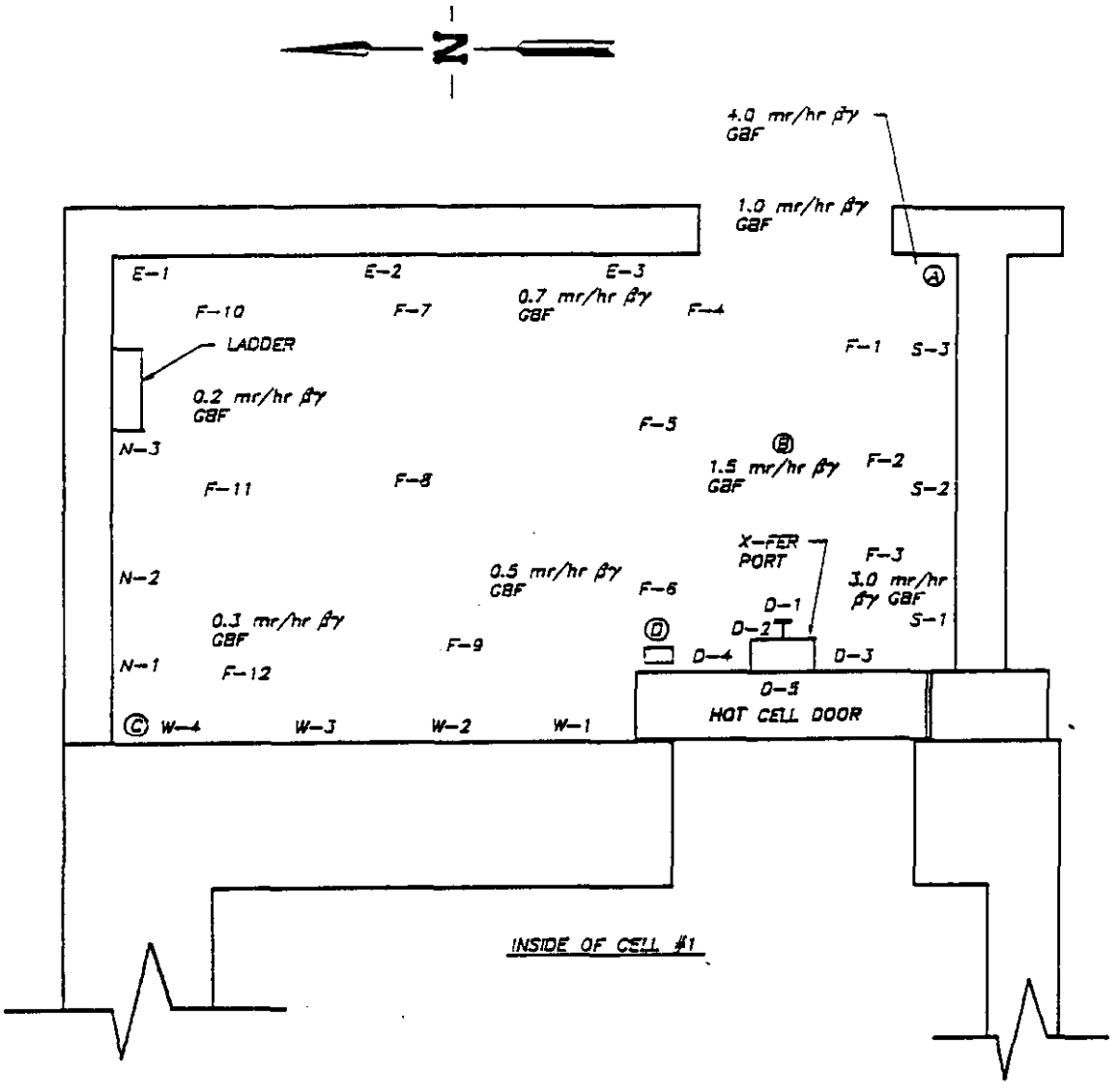
R. PERSKY EXPS. ≦ 5 mr FOR CELL ENTRY TO REMOVE FILTERS

FILTER READINGS

CELL 1		CELL 2	
1. 500 mr		1. 30 mr	
2. 1 R/HR	βγ	2. 50 mr	βγ
3. 200 mr		3. 50 mr	
4. 200 mr			

GBF READINGS w/ RO–3A

ARA HOT CELLS PLAN



DIRECT RADIATION READINGS:

- Ⓐ = FIXED @ 2 R/HR βγ / 1.7 R/HR γ @ CONTACT w/ FLOOR w/ RO-3A
- Ⓑ = FLOOR DRAIN, 50 mr/hr βγ @ CONTACT w/ GM
- Ⓒ = FIXED @ 25 mr/hr βγ @ CONTACT w/ FLOOR w/ GM
- Ⓓ = DOOR GUIDE, 50 mr/hr βγ @ CONTACT w/ GM

ALL GBF READINGS TAKEN AT WAIST LEVEL w/ GM

FLOOR SMEARS d/m βγ / d/m α

F-1	11,300 / 40
F-2	8,300 / 0
F-3	15,900 / 75
F-4	12,200 / 0
F-5	8,000 / 0
F-6	8,500 / 20
F-7	14,700 / 20
F-8	6,400 / 0
F-9	7,200 / 0
F-10	7,400 / 0
F-11	6,800 / 0
F-12	5,700 / 0

WALL SMEARS d/m βγ / d/m α

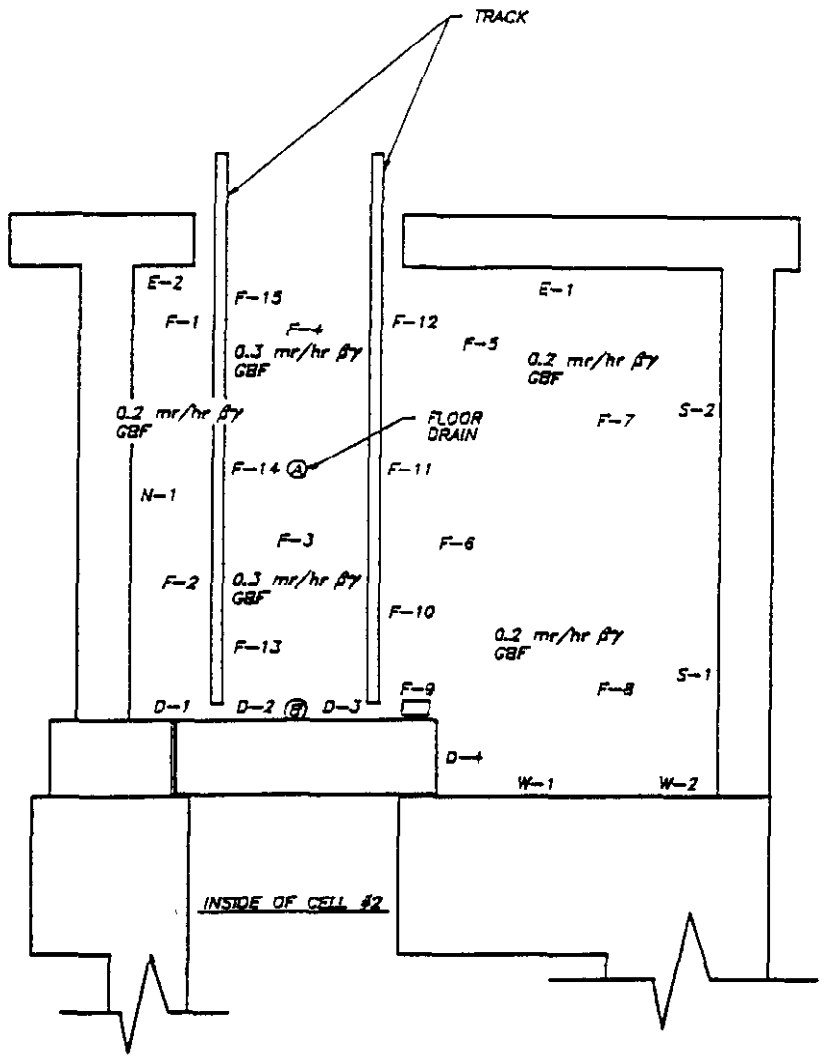
W-1	14,900 / 28
W-2	4,200 / 0
W-3	2,400 / 0
W-4	2,400 / 0
E-1	3,500 / 0
E-2	1,000 / 0
E-3	2,000 / 0
N-1	1,100 / 0
N-2	4,000 / 0
N-3	4,200 / 0
S-1	12,000 / 0
S-2	6,500 / 0
S-3	9,600 / 0

DOOR & X-FER PORT SMEARS d/m βγ / d/m α

D-1	4,340 / 30	2,800 / 0
D-2	3,500 / 0	5,200 / 0
D-3	10,500 / 0	
D-4	10,300 / 28	
D-5	8,000 / 0	

≤ 300 cm² SURFACE AREA FOR SMEARS

ARA HOT CELLS
CELL #1 SERVICE AREA PLAN
ZONE II @ LEVELS
WK 9-9-38



DIRECT RADIATION READINGS:

Ⓐ = 1 mr/hr βγ @ CONTACT w/ FLOOR DRAIN

Ⓑ = ≤ 3 mr/hr βγ @ CONTACT w/ DOOR BASE

ALL GBF READINGS TAKEN AT WAIST LEVEL w/ GM
SMEARS TAKEN WERE ≤ 300 c/m²

DOOR SMEARS d/m (βγ)	
D-1	600
D-2	1,600
D-3	2,200
D-4	1,000

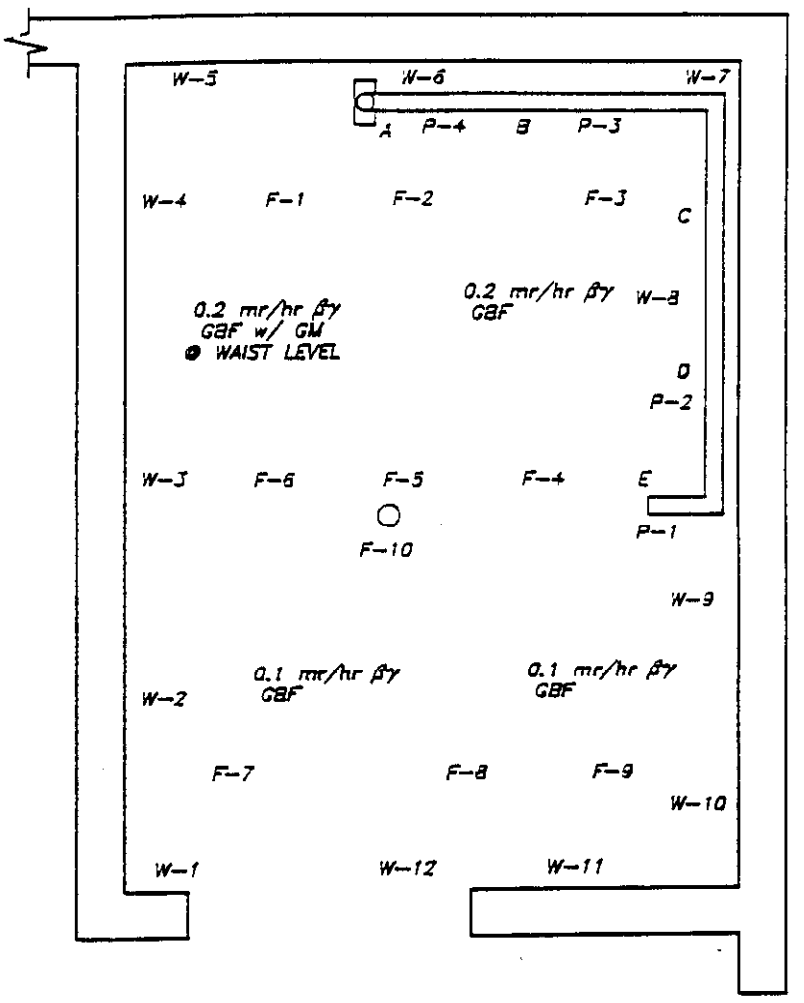
TRACK SMEARS d/m (βγ)	
F-10	9,400
F-11	4,500
F-12	4,800
F-13	12,000
F-14	17,000
F-15	3,500

WALL SMEARS d/m (βγ)	
W-1	600
W-2	700
S-1	2,800
S-2	4,300
E-1	1,100
E-2	880
N-1	1,600

FLOOR SMEARS d/m (βγ)		
	F-1	1,600
	F-2	11,000
	F-3	6,500
	F-4	6,800
	F-5	2,900
	F-6	4,000
	F-7	3,200
	F-8	1,000
(DOOR GUIDE)	F-9	11,600

ALL SMEARS TAKEN SHOWED < 20 d/m α

ARA HOT CELLS
CELL #2 SERVICE AREA PLAN
ZONE II C LEVELS
WK 9-9-88



NOTE: 10 BOXES OF C'd Pb BRICKS/SHEETING STACKED THRU CENTER OF ROOM. 1 BOX OF NON-C'd Pb ALSO PRESENT IN STACK. MAX. CONTACT READING PRESENT ON BOXES IS 0.3 mr/hr βγ w/ GM. ALL BOXES SMEARED < 200 d/m βγ / < 20 d/m α.

FLOOR SMEARS d/m βγ		
F-1	1,540	
F-2	1,500	
F-3	6,380	
F-4	780	
F-5	3,440	
F-6	6,000	
F-7	2,880	
F-8	1,200	
F-9	2,000	
F-10	3,120	(FLOOR DRAIN)

WALL SMEARS d/m βγ	
W-1	<200
W-2	<200
W-3	220
W-4	<200
W-5	370
W-6	8,600
W-7	12,780
W-8	10,000
W-9	1,400
W-10	440
W-11	630
W-12	460

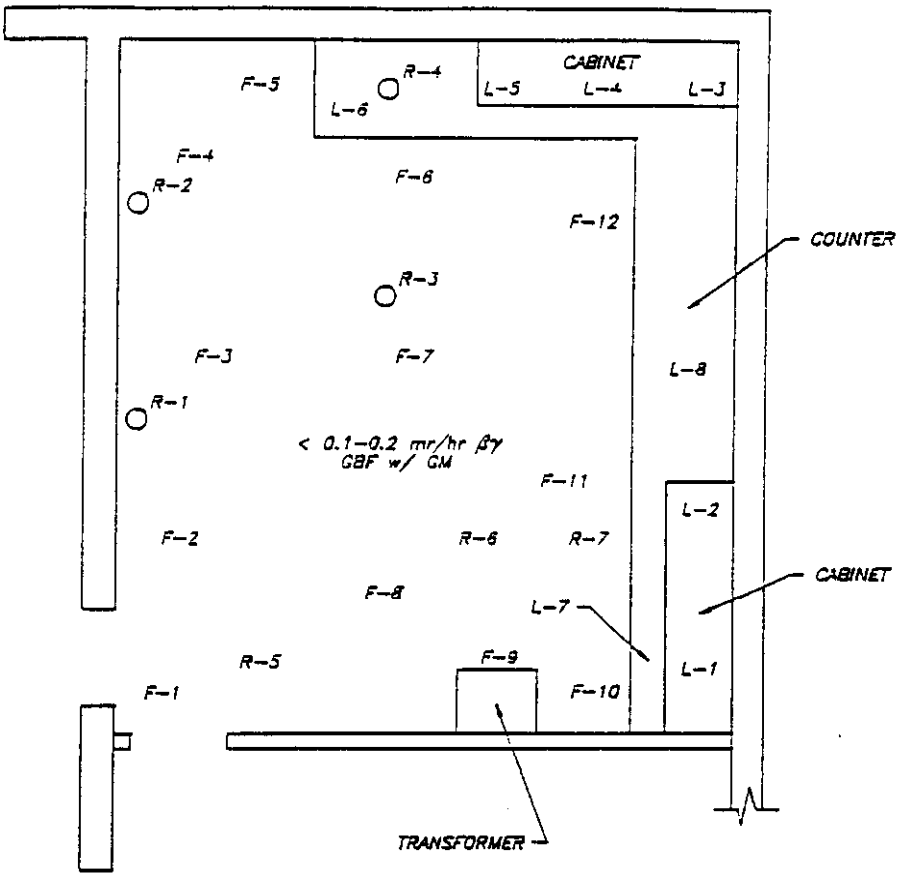
DRAIN PIPE mr/hr βγ	
A	0.5
B	13
C	0.5
D	0.8
E	15

ALL READINGS MADE
● CONTACT w/ GM

DRAIN PIPE SMEARS d/m βγ	
P-1	11,940
P-2	6,160
P-3	2,740
P-4	1,620

SMEARS WERE ≤ 300 cm² WITH MAX. α ℄ OF 40 d/m NOTED.

ARA HOT CELLS
RM #124--DECON. ROOM PLAN
9-26-88



DIRECT CONTACT READINGS w/ GM:

R-1	0.1 mr/hr βγ @ DRAIN LINE
R-2	0.5 mr/hr βγ @ DRAIN LINE
R-3	0.1 mr/hr βγ @ DRAIN LINE
R-4	5.0 mr/hr βγ @ DRAIN LINE
R-5	30 mr/hr βγ @ FLOOR
R-6	12 mr/hr βγ @ FLOOR
R-7	10 mr/hr β @ FLOOR

FLOOR SHOWS FIXED ℄ OF 2,000->50,000 c/m βγ w/ 2A & ≤ 30 mr/hr βγ @ CONTACT w/ GM IN CRACKS BETWEEN TILES & ALONG WALL BASE BOARDS. NO α ℄ DETECTED ON FLOOR w/ PAC-4S.

FLOOR SMEARS d/m βγ

F-1	270
F-2	210
F-3	4620
F-4	400
F-5	0
F-6	420
F-7	250
F-8	0
F-9	330
F-10	950
F-11	510
F-12	270

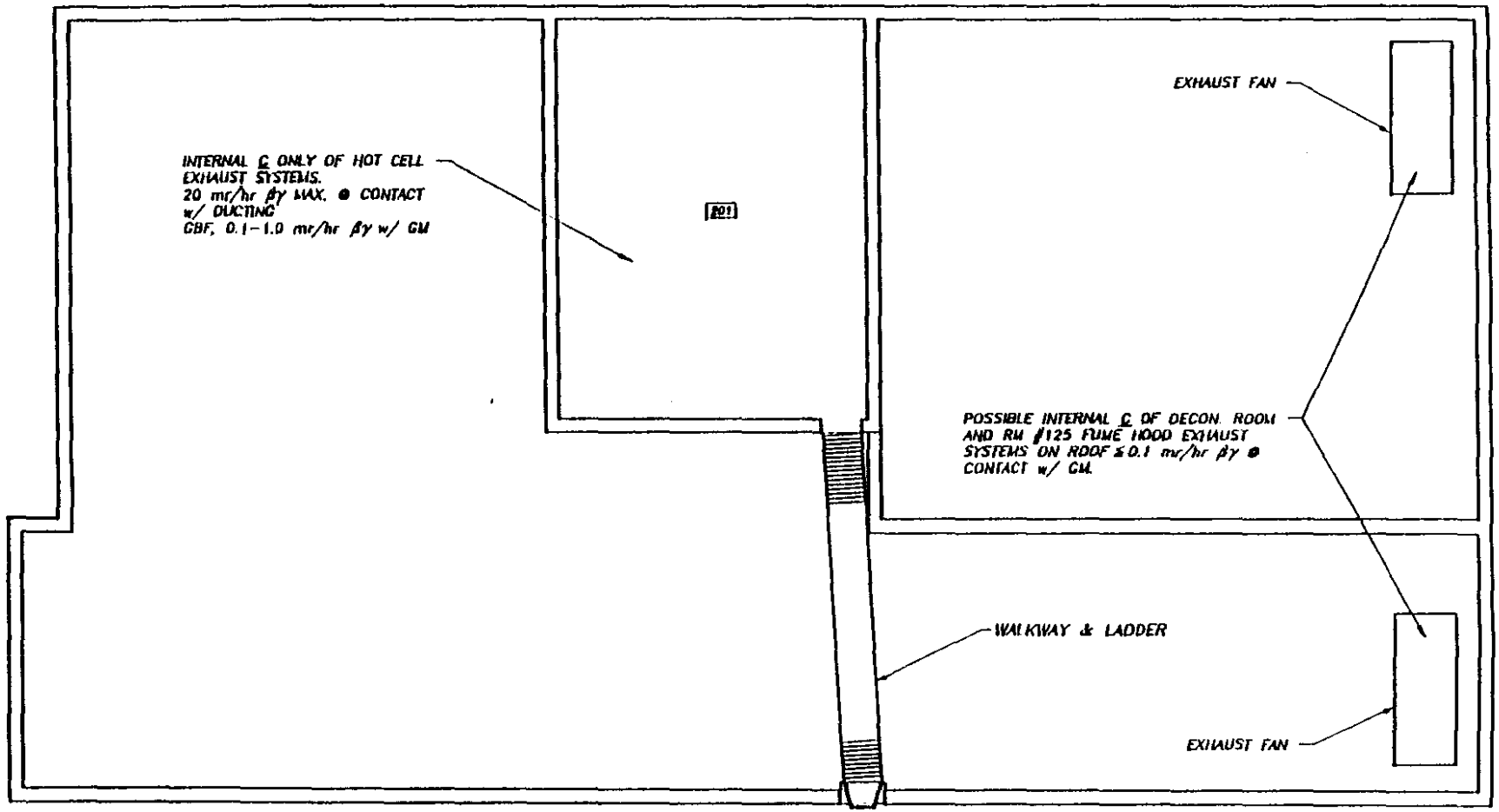
CABINET SWIPES c/m βγ w/ 2A (LARGE AREA)

L-1	200
L-2	<100
L-3	<100
L-4	200
L-5	300
L-6	2,000
L-7	<100
L-8	150

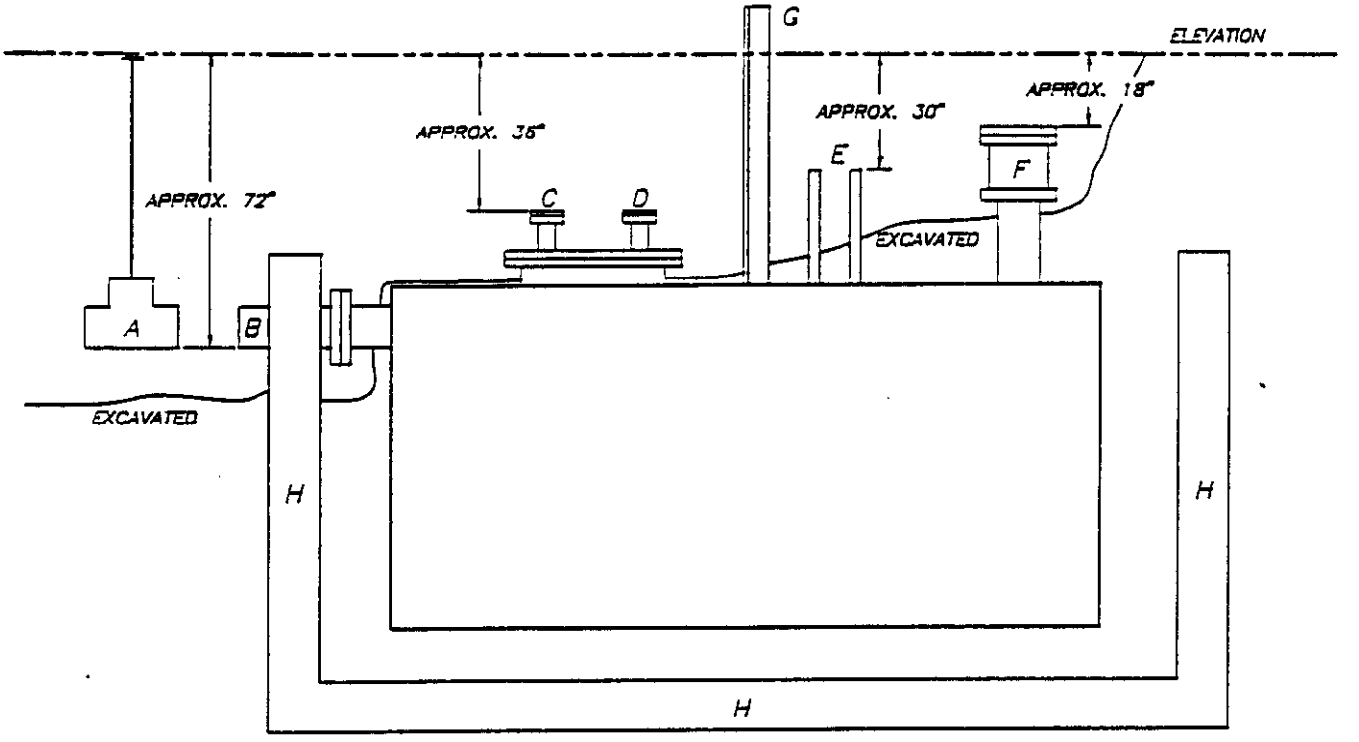
NO α ℄ DETECTED w/ PAC-4S ON SWIPES

ALL FLOOR SMEARS
< 20 d/m α / ≤ 300 c/m²

ARA HOT CELLS
ROOM #125 PLAN
9-23-88



ARA HOT CELLS
PLAN--ROOF & VENTILATING EQUIP. ROOM



A = ISOLATION VALVE, CUT & CAPPED, ≤ 500 mr/hr βγ @ CONTACT, 50 mr/hr βγ @ 2'-0
B = 4" INLET LINE, CUT & CAPPED, ≤ 300 mr/hr βγ @ CONTACT
C = 2" INLET LINE, BLIND FLANGED, 20 mr/hr βγ @ CONTACT (≤ 3,000 c/m βγ w/ 2A IN SOIL)
D = 2" INLET LINE, BLIND FLANGED, 20 mr/hr βγ @ CONTACT
E = 1" INSTR. LINES, CUT & CAPPED, 10 mr/hr βγ @ CONTACT
F = 4" OUTLET PUMP HOUSING, BLIND FLANGED, 30 mr/hr βγ @ CONTACT, ≤ 5,000 c/m βγ w/ 2A IN SOIL
G = 2" ANGLE IRON, LEFT AS EXCAVATION GUIDE
H = CONCRETE VAULT

NOTE: GBF VARIED FROM 5-30 mr/hr βγ @ WAIST LEVEL WITH TANK EXPOSED. 2 R/HR βγ WAS SEEN LEVEL WITH MANHOLE COVER WHEN REMOVED. GENERAL C. LEVELS SEEN IN SOIL WERE 400-1000 d/m βγ WITH SMEAR COUNTER EXCEPT FOR AT LOCATION C, D, & F.
CONTACT READINGS A & B MADE w/ RO-3A, ALL OTHER READINGS MADE w/ GM.

ARA HOT CELLS
HOT WASTE CATCH TANK
9-1-88

INEL TANK DATABASE FORM

Directions for form use: Fill in the blanks with appropriate information and/or highlight the essential information contained between commas. The end result will be a computerized tank database.

Tank Owner: DOE-ID Facility: ARA Tank Number ARA-729, ARA-I
Responsible Person: CFA Landlord Phone No. 526-2830

Tank Volume: 1,000 gallons
Date Installed: 1959 Source of Date: _____

EPA Regulated Under: UST, Hazardous Waste, Radioactive Waste, Not Regulated

Tank Reported to EPA: No, Not Required, Yes - Date: _____

Contents: Unknown, Empty, Empty and Clean, No. 2 - Diesel, No. 1 - Diesel, Regular Gas, Unleaded Regular Gas, Super Unleaded Gas, Motor Oil, Waste Oil, Solvent ( ), Hydraulic Fluid, Aviation Gas (JP-4), Radioactive Waste, Hazardous Waste ( ), Other ( )

Function: Unknown, Vehicle Fuel or Oils, Aviation Fuel or Oils, Waste Oil, Heating Oil, Emergency Generator, Wastewater, Septic Tank, Sump, Pesticides, Fertilizer, Electrical Equipment, Flow Through Process Tank, Other ( )
Radioactive Waste (RADIONUCLIDES)
Hazardous Waste ( )

Tank Status: In Use, Standby with Product, Standby Empty, To Be Closed, Not Operational After March 1987, On COCA List, Temporarily Closed, To Be Removed, Date Removed: _____, To Be Abandoned-in-Place, Date of Abandonment: _____, Inert Fill Material (Unknown, Concrete, Sand, Other), Other _____

Construction:
- Material: Unknown, Carbon Steel, Stainless Steel, Aluminum, Plastic/Fiberglas, Concrete.
- Wall Type: Unknown, Single, Double, Round, Rectangular.
- Installation: Unknown, Horizontal, Vertical.
- Covering: Concrete, Asphalt, Gravel, Grass, Earth.
- Other Notes: Secondary Containment.

Protection:
- External: Unknown, None, Asphalt, Plastic/Fiberglas, Paint, Other
- Internal: Unknown, None, Epoxy, Other
- Cathodic: Unknown, None, Anode, Impressed Current, Other

Piping System:
- Type: Unknown, Pressure, Suction, Vapor Recovery Syst
- Material: Unknown, Steel, Coated Steel, Plastic/Fiberglas, Other Stainless Steel
- Wall: Unknown, Single, Double.
- Installation: Open, Lined, Lined - Leak Detection Equipment
- Cathodic Protection: Unknown, None, Anode, Impressed Current.

#3

INEL TANK DATABASE FORM (Continued - Page 2)

Tank Drawings: Not Available. Original. As Built.
Drawing No. _____

Tank Dimensions: Diameter _____ Length _____

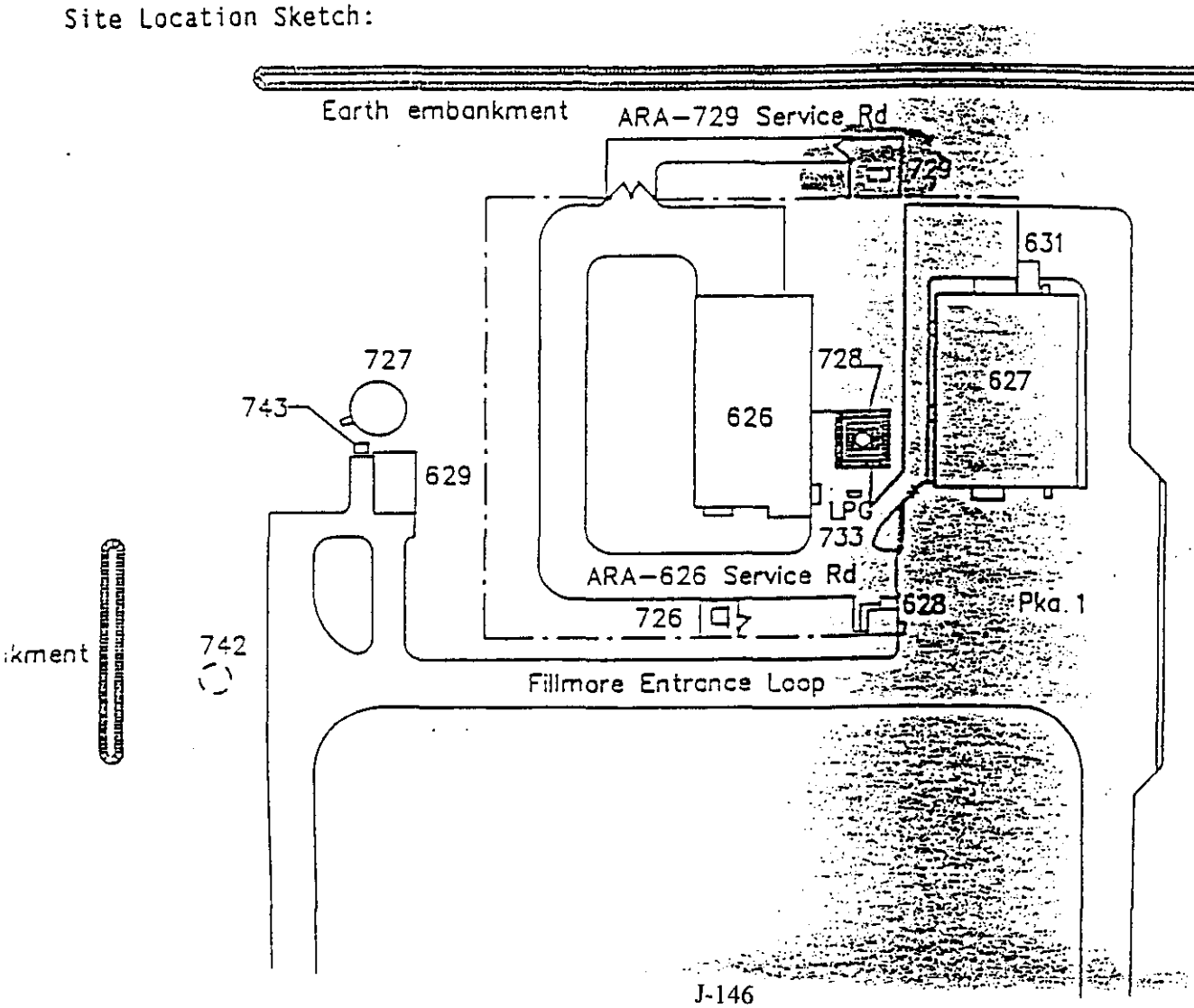
Ports:
Manway: Unknown. No. Yes. Size
Fill: At Tank. Remote. Size
Locked Cap. Spill/ Overfill Protection.
Gauging: None. Separate. Size
Vent Pipe: Size

End Design: Unknown. Flat. Hemispherical. Ellipsoidal. Other

Pumping System: Turbine Pump in Tank. Above Ground Pump. Dispenser Pump
Drop Tube: Unknown. None. Permanent. Removable.

Additional Design/Construction Notes:

Site Location Sketch:



Volume Calibration Chart: No Chart. Chart Required. Chart Not Required.
Strapping Date:_____ By:_____

Tank Tightness Tested: Date:_____ By:_____
Method:_____
Results:_____
_____
Repairs:_____
_____

Tank Condition: Internal Inspection Date: _____ By: _____
Results: _____

Volume Gauging: Unknown. None. Stick (Daily. Weekly. Monthly.)
Mechanical Ball. Float. Tape. Tape and Ball. Electronic.
Automatic Tank Gauge - Type:

Inventory Control: Input Meter: Deliver Truck. Slick Gauged. Mechanical Meter.
Temperature Compensated Meter.
Withdrawal: Unknown. None. Mechanical Meter. Temperature Compensated Meter.

Inventory Records: None. Yes (years). Not Required. Required.
Content Level: (Stable. Drops. Raises)
Water Present: (Yes/No)
Other Comments:

Leak Detectors: Unknown. None. Internal. External. Interstitial.
Type/Brand:

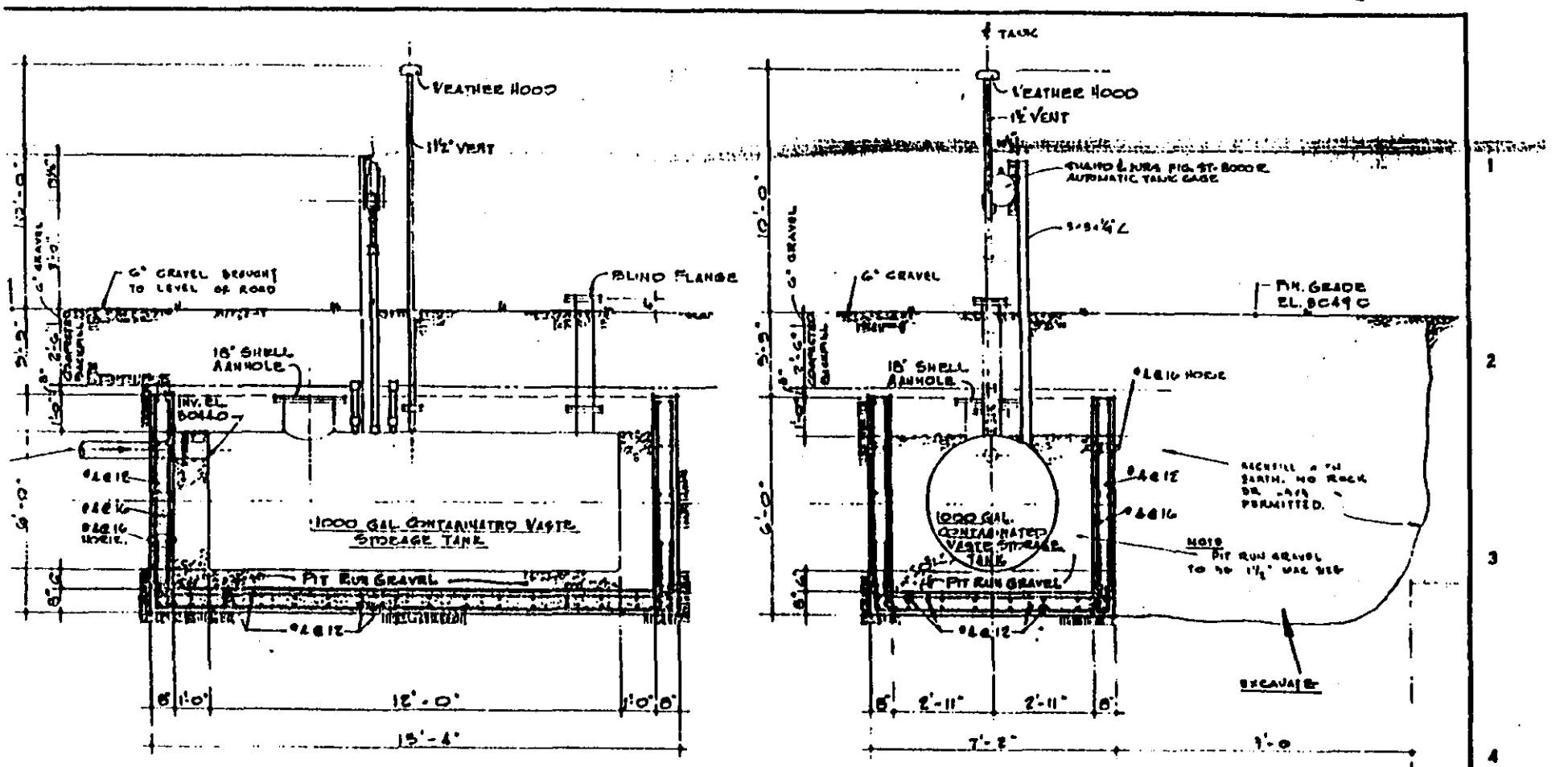
Tank Modifications and Upgrades:
Monitoring Equipment: Date:_____ Type:_____
Piping Leak Detection: Date:_____ Type:_____
Spill and Overfill: Date:_____ Type:_____
Corrosion Protection: Date:_____ Type:_____

Monthly Monitoring Method:
Automatic Tank Gauging with Inventory Control
Vapor Monitoring
Interstitial Monitoring
Other Methods:
Pipe Leak Detection Equipment

INEL TANK DATABASE FORM (Continued - Page 4)
GENERAL SITE ENVIRONMENTAL INFORMATION

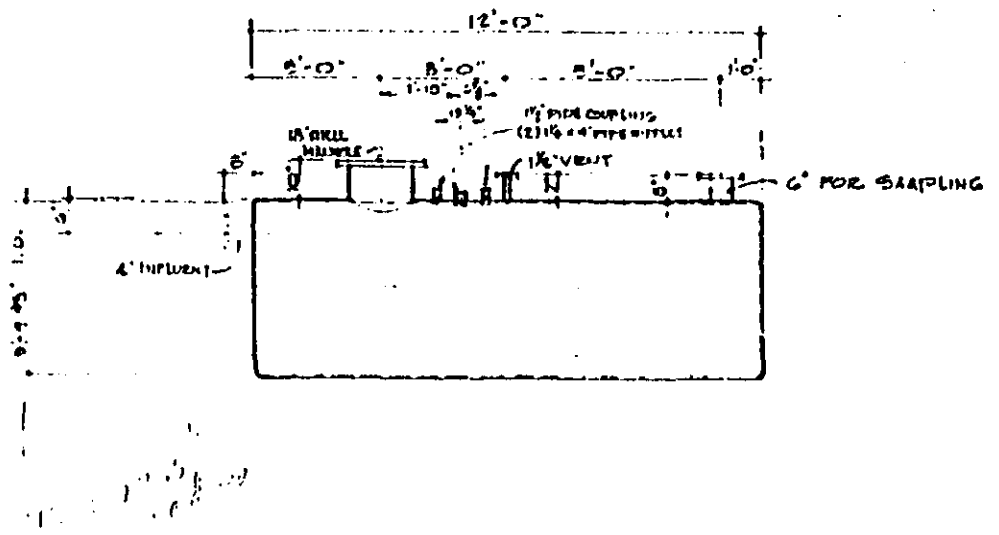
Elevation Above Mean Sea Level:	4900 ft.
Groundwater (GW) Depth:	400 to 600 ft.
Adjacent Exist GW Monitoring Well:	Yes, No, Approx. Distance:_______ft
Groundwater Test Well Required:	Yes, No, To-Be-Determined
Adjacent Surface Water:	None, Lake, River, Stream, Canal Unknown, Other:__________
Adjacent Underground Utilities:	Unknown, None, Gas, Water, Phone, Sewer, Electricity, Other__________
Adjacent Sensitive Land Use:	None, Home, School, Farm, Other:____
Tank Backfill Material	__________
Base Soil pH Factor:	Range: 3.9 to 7.0. - Acidic
UST Site Soil pH Factor:	__________
Hydraulic Conductivity & Direction:	Range: $1X10^{-3}$ to $2X10^{-1}$ cm/s to ___
Specific Resistivity Factor:	________ to ________ mohms/cm
Soil Type:	Unknown, Sand, Gravel, Rock, Clay Loam, (Combination) Other__________
Soil Chemical Concentration:	Chloride, Sulphide], Other:________
Product Soil Contamination:	Previous, Continued, Visual, Smell Fill Pipe Spill, Groundwater Test, Contamination History: __________
Random DC Current in UST Area:	Unknown, Yes, No, Value: ________ volts.

[illegible] [illegible] (distance) is
tank from another contamination
[illegible] area.



SECTION A
SCALE ⅜"=1'-0"

SECTION B
SCALE ⅜"=1'-0"



STORAGE TANK
SCALE ⅜"=1'-0"

tank radius = 72" − 8" − 6" − 12" = 46"

tank radius = 46"/2 = 23"

LEGEND

W_c CONTAMINATED WASTE LINE

—⋈— GATE VALVE

NOTES

1. FOR DETAIL OF RADIATION HAZARD WARNING SIGN SEE DRAWING # 727-S-1.
2. ALL PIPING ABOVE STORAGE TANK FLANGES TO BE SCH. 40 STEEL. ALL FLANGES ABOVE STORAGE TANK FLANGES SHALL BE STANDARD STEEL FLANGES.

AS BUILT
OFFICIAL USE ONLY

	BY	DATE
DRAWN	[illegible]	1-15-59
CHECKED	[illegible]	1-15-59
APPROVED	[illegible]	1-15-59
APPROVED	[illegible]	1-15-59
APPROVED		
APPROVED		
APPROVED		
AEC APPROVED	[illegible]	1-15-59
AEC APPROVED	[illegible]	1-15-59

SCALE: As Noted
DATE: 1-19-59

NO.	DATE	DESCRIPTION	DR.	APPD	CHK APPD
1	5-26-60	AS BUILT	H.S.	[illegible]	[illegible]

REVISIONS

A.R.E. AREA

CONTAMINATED WASTE DETAILS

NORMAN ENGINEERING CO.
CONSULTING ENGINEERS
BEVERLY HILLS, CALIFORNIA

FOR
U. S. ATOMIC ENERGY COMMISSION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO

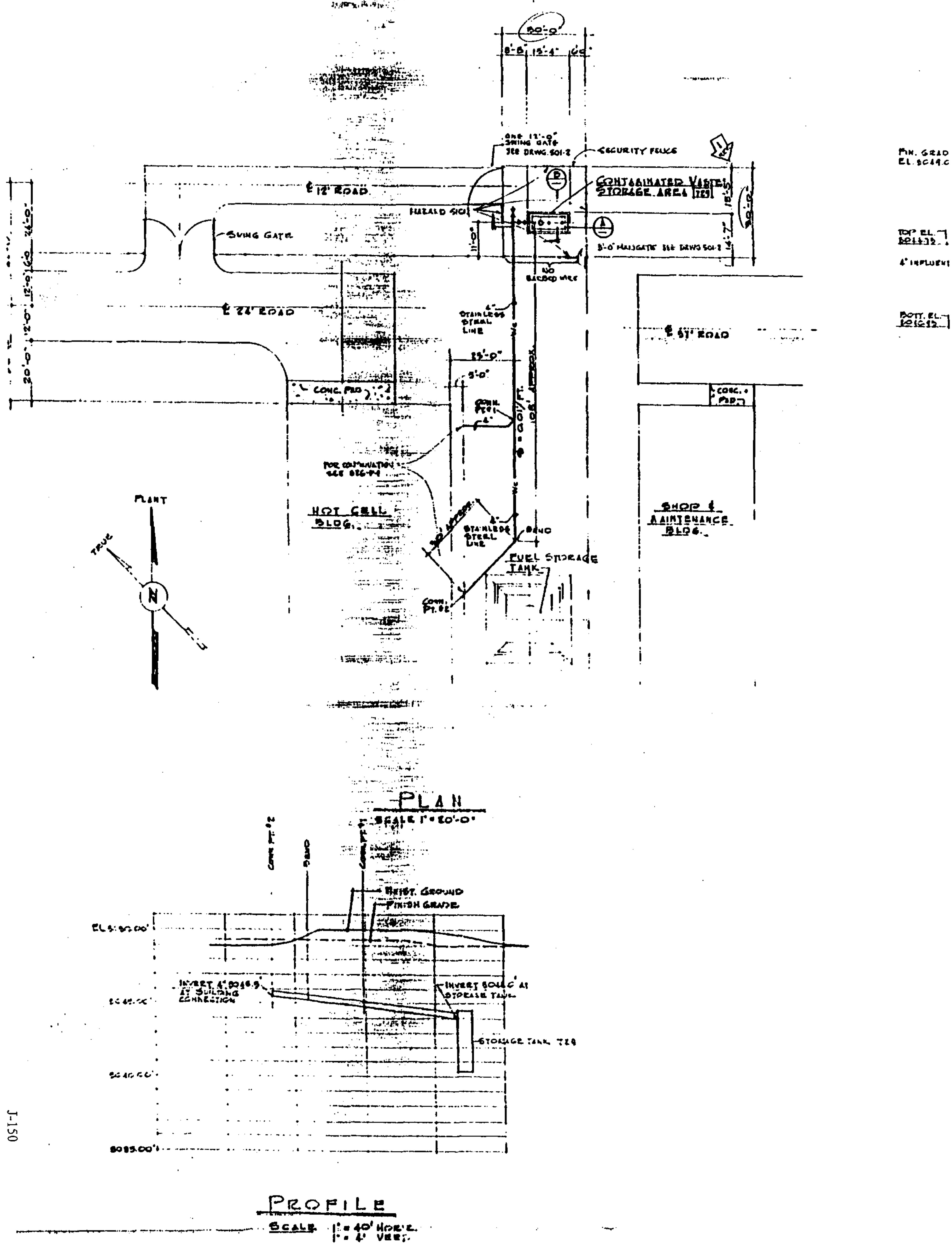
DWG. NO. 961-AREA/SF-301-3 REV. 1

INDEX CODE NUMBER
0680301 | 613 | 102714

CONTRACT AT (10-1) 1001

J-149

A B C D E F G H **OFFICIAL USE ONLY**



A B C D E F G H **OFFICIAL USE ONLY**